Idaho Transportation Department

Work Zone Safety and Mobility Program

DECEMBER 2008

PREFACE

In September 2004, the Federal Highway Administration (FHWA) published updates to the work zone regulations at 23 CFR 630 Subpart J. This updated Rule, referred to as the Work Zone Safety and Mobility Rule, applies to all State and local governments that receive Federal-aid highway funding. Transportation agencies are required to comply with the provisions of the Rule by October 12, 2007. The changes made to the regulations broaden the former Rule to better address the work zone issues of today and the future. On December 5, 2007 the FHWA added a new Subpart K to 23 CFR part 630 to supplement the other regulations that govern work zone safety and mobility. The effective date of this regulation is December 4, 2008.

Growing congestion on many roads, and an increasing need to perform rehabilitation and reconstruction work on existing roads, are some of the issues that have led to additional, more complex challenges to maintaining work zone safety and mobility. To help address these issues, the Work Zone Safety and Mobility Policy was created to, provide a decision-making framework that facilitates comprehensive consideration of the broader safety and mobility impacts of work zones across project development stages, and the adoption of additional strategies that help manage these impacts during project implementation. This Policy is intended to support systematic consideration and management of work zone impacts across all stages of project development. The Idaho Transportation Department (ITD) has developed standard processes and procedures to support implementation of the Policy. These processes and procedures include the use of work zone safety and operational data, work zone training, and work zone process reviews. ITD was also encouraged to develop procedures for work zone impacts assessment. The primary element of the Policy calls for the development of project-level procedures to address the work zone impacts of individual projects. These project-level procedures include identifying projects that ITD expects will cause a relatively high level of disruption and developing and implementing transportation management plans for all projects.

WORK ZONE SAFETY AND MOBILITY PROGRAM

I. POLICY STATEMENT:

The Idaho Transportation Department's policy is to plan, design, construct, maintain, and operate safe and efficient work zones. ITD will develop, implement, and maintain the following work zone assessment and management procedures; Transportation Management Plan (TMP) and procedures; public information and outreach procedures; training program for personnel involved with work zone traffic control, and process review procedures.

II. GOALS AND OBJECTIVES:

- Provide a safe environment for highway workers and the traveling public
- Work "Toward Zero Deaths" in work zones.
- Maintain a crash rate that is equal to or less than the crash rate that existed prior to implementation of the work zone.
- Maintain or improve upon maximum project travel delays stated in the construction contract.
- Utilize appropriate ITS technologies that reduce delays and improves safety, where available.
- Develop and implement training programs for those involved in planning, designing, constructing and maintaining work zones.
- Develop a data base to identify work zone safety and mobility issues.
- Establish and maintain a Work Zone Safety and Mobility Team.
- Conform with the current version of the MUTCD that has been adopted by the State of Idaho.

III. SIGNIFICANT PROJECT AND WORK ZONE IMPACT:

Definitions:

Significant Project:

A significant project is one that, alone or in combination with other concurrent projects nearby is anticipated to cause sustained work zone impacts that are greater than what is considered tolerable based on engineering judgment.

All Interstate system projects within the boundaries of a designated Transportation Management Area (TMA) that occupy a location for more than three days with either intermittent or continuous lane closures shall be considered as significant projects. The Idaho Transportation Department (ITD) may request an exception for Interstate "Significant Project" status based on the ability to show that the specific Interstate system project or categories of Interstate projects do not have sustained work zone impacts.

A significant project shall be indentified at the time the State Transportation Improvement Program (STIP) is developed.

Work Zone Impact:

Work-zone induced deviations from the normal range of transportation system safety and mobility.

IV. WORK ZONE TRAFFIC CONTROL POLICY:

This policy is intended to increase safety for both workers and the traveling public by increasing the quality and statewide uniformity of work zone traffic control design and implementation.

Safety for workers and the public shall be included when designing a project and when reviewing a contractor's proposed changes to the traffic control plans to accommodate construction operations. *Maintenance and Permit (including Utility) operations must also comply with this policy.*

1. Separation

The preferred methods for minimizing vehicle intrusions are to remove traffic from the project work zone by lateral separation of the traffic from the workers and construction hazards. Non-motorized traffic must be addressed within all project work zones and must be addressed by the traffic control plans.

In selecting a separation method the design and work zone traffic control operations should:

1) Separate the traffic from the work zone by:

    - Complete road closures
    - Crossovers
    - Detours

Or

2) Separate the traffic from the workers and hazards by using concrete barrier rail with a lateral separation from the travel lanes and reduce speed limits according to Table 1;

Or

3) Separate the traffic from the workers and hazards by using other temporary traffic control and channelization devices with a lateral separation from the travel lanes and reduce speed limits according to Table 1.

When applying and evaluating separation methods, the required speed reduction is shown in Table 1.

TABLE 1		
LATERAL SEPARATION* AND SPEED LIMIT REDUCTION TABLE		
Separation Method	Lateral Separation* (in feet)	Speed Limit Reduction
With Concrete Barrier Rail	0 to 6	Reduce Speed Limit by no more than 10 mph
	>6	No Reduction
Without Concrete Barrier Rail	0 to 6	Maximum Speed Limit of 45 mph when workers or hazards** are present
	6 to 12	Maximum Speed Limit of 50 mph when workers or hazards** are present
	12 to 24	Maximum Speed Limit of 55 mph when workers or hazards** are present
	> 24	No Speed Limit Reduction

*Lateral Separation is the distance between the edge of the nearest travel lane and any workers
**Hazards to the traveling public, other than concrete barrier rail, as determined by the Engineer

Mobility may be increased and exposure between the traffic and the work zone can also be minimized by reducing the length of the active work zone by using “Mobile Operations” (Mobile is work that moves intermittently or continuously).

Regardless of the method selected, if a speed limit reduction is required, then adequate supplemental strategies shall be included in the traffic control plan. Strategies that should be considered on all projects to protect the public and workers are shown in Table 2. These strategies are not mutually exclusive. A combination of strategies should be considered during design and whenever changes are proposed to the approved work zone traffic control plans.

Speed reductions in work zones should be carefully considered; and strategies should be employed to mitigate the risk of secondary accidents.

TABLE 2

TRAFFIC MANAGEMENT METHODS AND STRATEGIES

TRAFFIC MANAGEMENT METHODS							STRATEGIES
Complete Road Closure	Crossovers	Detour	Diversions	Lane Closure	One Lane Two-Way Operations	Mobile Operations	
C	C	C	C	C	C	C	Separation with Concrete Barrier Rail (see Table 1)
C	C	C	C	C	C	C	Separation without Concrete Barrier Rail (see Table 1)
C	C	C	C	C	C	C	Speed Reduction
C	C	C	C	C	C	C	Law Enforcement
R	R	R	R	R	R	R	High Visibility Clothing
R	R	R	R	R	R	C	Public Information
C	C	C	C	C	C	C	Public Education
R	R	R	R	R	R	R	Worker Education
C	C	C	C	C	C	C	Intelligent Transportation Systems
C	C	C	C	C	C	C	Variable Message Signs / Board
C	C	C	C	C	C	C	Highway Advisory Radio
		C	C	C	C		Intrusion Alarms
C	C	C	C	C	C		Radar Speed Trailers
	C	C	C	C	C		Remote Cameras
		C	C	C	C		Temporary Traffic Signals
			C	C	C	C	Flaggers
			C	C	C	C	Pilot Car
	C	C	C	C	C	C	Pace Vehicles
R	C	C	C	C	C		Concrete Barrier Rail
C	C	C	C	C	C	C	Channelizing Devices
C	C	C	C	C	C	C	TTB - Temporary Traffic Barrier
C	C	C	C	C	C		Visual Barriers
C	C	C	C	C	C		Type I & II Barricades
R	R	R	C	C	C		Type III Barricades
C	C	C	C	C	C		Additional Lighting
C	C	C	C	C	C	C	Working Hours
C	C	C	C	C	C		Incentives/Disincentives
C	C	C	C	C	C		Lane Rental
C	C	C	C	C	C	C	Safety Incentives
		C	C	C	C	C	Temporary Rumble Strips
	C	C	C	C	C		Alternating Lanes of Travel
C	C	C	C	C	C	C	Automated Equipment
		C		C	C	C	Truck Mounted Attenuator
						C	Protective Vehicles

"C" means this must be considered

"R" means this is required

2. Maintenance of Traffic Control Devices

To increase motorist conformance and confidence in the Department's work zone traffic control, all traffic control devices shall be installed, maintained and removed to reflect the actual field conditions. Work zone traffic control is actively required only while highway users need guidance to make the desired response. When devices are not actively required, the devices shall be removed. Removal shall begin as quickly as practical.

In all cases, the highest appropriate speed limits should be posted to reflect the current field conditions within one hour of any work zone condition change.

Removal of work zone traffic control signing not actively required for the current operations, shall be accomplished by removal from the clear zone, or laid flat, no less than 10 feet from the nearest edge of the traveled way. Signs mounted on posts and traffic control devices that are difficult or time consuming to remove, must be promptly, consistently, and *completely* covered when not actively required for the durations stated above. Turning sign faces away from traffic is not an approved method for removal or covering. To provide for continued effectiveness, all temporary traffic control devices shall be maintained in no less than marginal condition. This determination is based on ATSSA's Quality Guidelines for Work Zone Traffic Control Development. This document is adopted as ITD's assessment standard.

3. Speed Zone Design

In all situations, maintaining the highest speeds possible, up to the existing speed limits, shall be the Department's standard. Speed limit reduction zones should be kept as short as possible in length and in duration. Each work zone traffic control plan shall indicate the maximum lengths, locations, and circumstances where speed limit reductions will be allowed. Contractor's proposed changes to the traffic control plans to accommodate construction operations must comply with the specified lengths, locations, and circumstances to be considered for approval.

4. Law Enforcement

In situations where uniformed law enforcement assistance may be needed to enforce specific traffic laws, affect driver behavior, help maintain appropriate speeds, improve driver alertness and help address other safety and mobility issues, funding and plans to support their participation should be identified and developed early in the planning process. Payment for law enforcement services may be included in a construction contract or by direct interagency payment. Costs associated with non-routine work of uniformed law enforcement personnel to help protect workers and road users and to maintain safe and efficient travel through highway work zones are eligible for Federal-aid participation. An interagency agreement between ITD and the law enforcement agency (ies) must be approved in advance of the start of law enforcement involvement for reimbursable work zone activities. The ITD Office of Highway Operations and Safety will prepare a master agreement with the Idaho State Police and a sample agreement for other law enforcement agencies. All law enforcement officers involved in work zone activities shall be trained.

IDAHO TRANSPORTATION DEPARTMENT

GUIDANCE ON WORKZONE SAFETY AND MOBILITY

CHAPTER 1

WORK ZONE ASSESSMENT AND MANAGEMENT PROCEDURES

1. Requirements of the Work Zone Safety and Mobility Program

The Work Zone Safety and Mobility (WZSM) Program encourages agencies to develop and implement procedures to assess work zone impacts in project development, and to manage safety and mobility during project implementation.

This program requires that the scope of the work zone assessment and management procedures be based on the characteristics of projects or project classes. This aspect of the program is intended to account for the variation that exists in project types, characteristics, and complexity.

This program also requires the use of work zone data at both the project and process-level to manage and improve work zone safety and mobility.

- At the project-level the use of field observations, available work zone crash data, and operational information to manage the work zone impacts of individual projects while the projects are underway in the field is required.

- At the process-level, ITD is required to analyze work zone crash and operational data from multiple projects to improve agency processes and procedures, and in-turn continually pursue the improvement of the overall work zone safety and mobility.

2. Guidance for Implementation

The WZSM program brings about a new focus and new requirements to address work zone safety and mobility impacts. An important aspect is that it advocates (1) the comprehensive and systematic consideration of the broader safety and mobility impacts of work zones through a project's life cycle; and (2) the development and implementation of appropriate management strategies that help manage these impacts.

Work zone assessment and management procedures can provide a framework within existing project development processes to help the Idaho Transportation Department:

- Identify and understand the work zone safety and mobility implications of alternative project options and design strategies.
- Identify significant projects and better allocate work zone management resources to those projects likely to have greater work zone impacts.
- Identify transportation management strategies to manage the expected work zone impacts of a project.
- Estimate costs and allocate appropriate resources for the implementation of the work zone management strategies.
- Implement the strategies and monitor and manage work zone impacts during construction, maintenance, or utility work, and adjust the Transportation Management Plan (TMP) if needed.
- Conduct post-construction work zone performance assessment for assessing the performance of work zones and to improve work zone policies, practices, and procedures.

Work zone data, as described below, is necessary to make an informed assessment of the success of efforts to manage work zones and their impacts. Work zone field data also enable

agencies to assess how well planning and design estimates of anticipated impacts match what actually happens in the field. Work zone data supports performance assessments at both the project and program-levels. Available data and information provide the basis for assessing performance and taking appropriate actions to improve performance on individual projects as well as overall processes and procedures.

3. ITD Implementation

A. Project Application for Significant Projects

Project development level:

1. An analysis will be done to determine the existing Level of Service (LOS) and existing traffic delays.

2. A second analysis will be done utilizing the proposed traffic control to determine the expected LOS and traffic delays.

3. After the analysis have been completed a comparison will be done to determine if the project meets the goal and if expected traffic delays are equal to or less than that stated in the construction contract.

    a. If this goal is not met, other design construction staging or allowable work hours may be considered to bring the project within the requirements of the construction contract.

A crash analysis will be done to determine the pre-work zone crash rate within the project limits. This data will aid in determining how the ITD is meeting one of its work zone goals.

Documentation associated with the Work Zone Assessment shall be maintained and presented in the concept report which becomes part of the project records.

Project construction level:

Safety

A work zone crash assessment will be done by the district during construction, on a on-going basis to determine if the ITD is meeting it's goal. If the rate exceeds the pre-existing rate, consideration should be given to make modifications to the TMP.

Mobility

A work zone mobility assessment will be done as necessary to determine if the traffic delay goal is being met. This assessment will be performed and documented by the District and will consist of a drive through of the work zone and/or detour routes to measure what the actual delays are. If the delay is longer than allowed by the construction contract, consideration should be given to making modifications to the TMP.

Documentation associated with the Work Zone Assessment shall be maintained and become part of the construction project records.

B. **Project Application for Non – Significant Projects**

A database to track and analyze crashes in work zones will be developed and a yearly report will be generated.

The Work Zone Safety and Mobility Team will be required to review reports; and make recommendations to the Assistant Chief Engineer - Operations regarding changes that should be made to TMP's.

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GUIDANCE ON WORKZONE SAFETY AND MOBILITY

CHAPTER 2

DEVELOPING AND IMPLEMENTING TRANSPORTATION MANAGEMENT PLANS FOR WORK ZONES

1. Requirements of the Work Zone Safety and Mobility Program.

The WZSM program requires a TMP to lay out a set of coordinated transportation management strategies and describe how they will be used to manage the work zone impacts of a road project.

2. Guidance for Implementation

TMP lays out a set of coordinated transportation management strategies and describes how they will be used to manage the work zone impacts of highway projects. The scope, content, and level of detail may vary based on the anticipated work zone impacts of the project. TMP development should begin during project development and progress through the design and construction phase of a project.

3. ITD Implementation

The ITD shall establish and implement TMPs that best serve the safety and mobility needs of the traveling public, highway workers, businesses, and community.

The TMP development will begin at the time of project programming and will continue through the post-construction phase.

4. Project Application for Significant Projects

Significant projects TMPs will consist of a temporary traffic control (TTC) plan, as well as a transportation operation (TO) component and a public information (PI) component. The TMP will be an ongoing process from the scoping process through the construction process. TMP strategies may consist of strategies shown in Table 2.1 for Temporary Traffic Control, Chapter 3 for Public Information and Table 2.2 for Transportation Operations.

5. Project Application for Non – Significant Projects

Non significant TMPs will consist of a TTC plan and consideration should be given to a TO component and a PI component.

TABLE 2.1: Work Zone Management Strategies by Category, Part I

Temporary Traffic Control (TTC)		
Control Strategies	Traffic Control Devices *	Project Coordination, Contracting and Innovative Construction Strategies

• Construction phasing/
• Full roadway closures
• Lane shifts or closures
  - Lane width reductions (constriction)
  - Lane closure
  - Reduced shoulder width
  - Shoulder closure
  - Lane shift to shoulder/median
• One-lane, two-way operation
• Two-way traffic on one side divided facility (crossover)
• Reversible lanes
• Ramp closures/relocation
• Freeway-to-freeway interchange closures
• Night work
• Weekend work
• Work hour restrictions for peak travel
• Pedestrian/bicycle access improvements
• Business access improvements
• Off-site detours
	• Temporary signs
	  - Warning
	  - Regulatory
	  - Guide/ information
	• Channelizing devices
	• Temporary pavement markings
	• Arrow panels
	• Changeable Message Signs (CMS)
	• Flaggers and uniformed traffic control officers
	• Temporary traffic signals
	• Lighting devices
	• Other safety devices
		• Project coordination
		  - Coordination with other projects
		  - Utilities coordination
		  - Right-of-way coordination
		  - Coordination with other transportation infrastructure
		• Contracting strategies
		  - Design build
		  - A+B bidding
		  - Incentive/ disincentive clauses
		  - Lane rental
		• Innovative construction techniques (precast members, rapid cure materials)

* This is intended to be a partial list. A wide range of safety devices are described in part 6 of the Manual on Uniform Traffic Control Devices (MUTCD) and are widely used to enhance safety and mobility in highway work zones.

TABLE 2.2: Work Zone Management Strategies by Category, Part II

Transportation Operations (TO)			
Demand Management Strategies	Corridor/Network Management Strategies	Work Zone Safety Management Strategies	Incident Management and Enforcement Strategies
• Transit service improvements • Transit incentives • Park-and-ride promotion • Shuttle services • Parking supply management • Variable work hours • Telecommuting	• Signal timing/ coordination improvements • Temporary signals • Street/intersection improvements • Turn restrictions • Parking restrictions • Separate truck lanes • Truck/heavy vehicle restrictions • Ramp closures • Bus turnouts • Reversible lanes • Dynamic lane closure system • Railroad crossings controls • Speed limit reduction/ variable speed limits • Coordination with adjacent projects	• Changeable Message Signs (CMS) • Temporary traffic signals • Temporary traffic barrier • Crash-cushions • Temporary rumble strips • Intrusion alarms • Warning lights • Construction safety supervisor/inspectors • Project task force/ committee • Team meetings • TMP monitor/ inspection team • Windshield surveys • Project on-site safety training • Safety awards/incentives • Speed Radar Trailers • Traffic Control Review Team as Established by the Districts	• ITS for traffic monitoring/management • Surveillance (Closed-Circuit Television (CCTV), loop detectors, lasers, probe vehicles) • Traffic Screens • Total station units • Photogrammetry • Changeable Message Signs (CMS) • Highway Advisory Radio (HAR) • Media briefings • CARS 511 information dissemination • Local detour routes • Transportation Management Center (TMC) • Contract support • Incident/emergency management coordinator • Incident/emergency response plan • Dedicated (paid) police enforcement • Cooperative police enforcement • Increased penalties for work zone violations

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GUIDANCE ON WORKZONE SAFETY AND MOBILITY

CHAPTER 3

PUBLIC INFORMATION AND OUTREACH

1. Requirements of the Work Zone Safety and Mobility Program.

The WZSM program requires that the public information (PI) component of the TMP shall include communications strategies that seek to inform affected road users, the general public, area residences and businesses, and appropriate public entities about the project, the expected work zone impacts, and the changing conditions on the project. The scope of the PI component should be determined by the project characteristics and the public information and outreach strategies identified by the Idaho Transportation Department. Public information should be provided through methods best suited for the project, and may include, but not be limited to, information on the project characteristics, expected impacts, closure details, and commuter alternatives.

2. Guidance for Implementation

A work zone PI and outreach campaign involves communicating with road users, the general public, area residences and businesses, and appropriate public entities about a road construction project and its implications for safety and mobility. Developing and implementing this campaign should be started well before road construction begins and will need ongoing monitoring throughout the life of the project. Planning and implementing a campaign involves a set of key steps that ideally will be coordinated and outlined in a public information and outreach plan.

3. ITD Implementation

The public information and outreach process should begin in the preliminary engineering phase of project development, continue through construction, and may include post-construction activities. Example strategies are detailed in the tables at the end of this chapter.

All significant projects are required to include public information and outreach components. These components may be added to non-significant projects if it is deemed necessary by the project development team.

4. Project Application for Significant Projects

The project development team, using input from project stake holders and the affected traveling public, will determine which PI strategies are to be implemented on the project. Typically, the following strategies may be implemented on all significant projects:

A. Brochures, flyers, fact sheets, and newsletters
B. Public meetings, task forces, workshops, and project related events
C. Paid newspaper advertising
D. Paid TV advertising
E. Radio traffic news
F. Emergency and information booklet
G. Continuously updated information on Idaho's 511 system

5. Project Application for Non – Significant Projects

A. It may be determined that a public information and outreach component is warranted for a non-significant project. In such cases, the types of strategies to be implemented will be determined by the project development team in conjunction with project stakeholders.

Table 3.1 - ITD Public Information and Outreach Strategies for Significant Projects

Strategy	Who	Primary Target Audience	Benefit	Issues	Implementation Phase	Relative Cost to Project
Website	- Public Affairs/ Hired Public Information Coordinator	- Pre-trip travelers - Most other audiences	- Access to real-time information. - Ability to access all project related materials in one place. - May be easy to update	- Target audience must be aware of the web site. - May not reach all of the target audience (excludes people without an Internet connection. - Information must be current and active. - Cost will vary dependent on complexity of web site. - Site should be updated daily.	- Pre-construction - Construction - Post-Construction	Low/ Medium
Web-connected traffic cameras	- Public Affairs/ Hired Public Information Coordinator/IT/MESD	- Pre-trip travelers - Most other audiences	- Allows users to view real-time traffic conditions. - Users find information credible because they can actually see the traffic conditions on the road	- May exclude users with a dial-up connection. - Cameras can be costly.	- Construction	Medium
Brochures / flyers Fact sheets / newsletters	- Public Affairs/ Hired Public Information Coordinator	- Local travelers - Commuters - Commercial drivers - Residents	- Low cost - Easy to distribute	- Information can become stale quickly. - Often targets local motorists only. - Must be designed in a manner that makes drivers want to read the information.	- Construction - Post-Construction	Low/ Medium
Public meetings/ task forces / workshops / events	- Designer (preconstruction) - District (during construction)	- Local travelers - Major trip generators - Residents - Businesses - Public officials - Major employers - Local agencies	- Good exposure to the public. - Give agency a chance to raise credibility with the public. - Gives public a chance to voice their concerns.	- Need to make sure the right audience is at the events. - Need to be wary of making “empty” promises.	- Pre-construction -Construction	Low

Table 3.1 - ITD Public Information and Outreach Strategies for <u>Significant Projects</u>

Strategy	Who	Primary Target Audience	Benefit	Issues	Implementation Phase	Relative Cost to Project
Paid newspaper advertising	- Public Affairs/ Hired Public Information Coordinator	- Local travelers (pre-trip) - Commercial drivers (pre-trip) - Major trip generators - Residents and small businesses	- Can reach many people at one time. - The same ad can be used in many different newspapers. - Agency controls the content and timing of the message.	- May not target local motorists. - Newspaper readers may skip over ads. - Requires targeted audience to receive the paper.	- Pre-construction - Construction - Post-Construction	Medium/ High
Paid TV advertising	- Public Affairs / Hired Public Information Coordinator	- Pre-trip travelers - Local travelers	- Can reach many people at one time. - Agency controls the content and timing of the message.	- May not target local motorists. - Time of broadcast	- Pre-construction - Construction - Post-Construction	High
Radio traffic news	- Public Affairs / Hired Public Information Coordinator/ District	- Pre-trip travelers - Local travelers	- Can reach many people at one time. - Little or no cost. - Target people who are likely to use the information.	- May only target local motorists. - Coverage more likely for major projects. - Don't have as much control of the message	- Construction	Low
Project hotline / 511 System	- District Maintenance and Engineering	- Pre-trip travelers - Drivers en route	- Information can be accessed whenever it is needed. - Can allow motorists to provide feedback via recorded message. - May be easy to update.	-Information must be current. - Audience needs to be aware of the hotline number.	- Construction	Low/ Medium
Dynamic message signs (DMS)	- Districts/ Contractor	- Drivers en route	- Provides information directly to motorists affected by the project. - Can provide detour information.	- Message must be easy to read. - Signs must be placed appropriately. - Information should be useful and accurate.	- Construction	Low/ Medium/ High

Table 3.1 - ITD Public Information and Outreach Strategies for <u>Significant Projects</u>

Strategy	Who	Primary Target Audience	Benefit	Issues	Implementation Phase	Relative Cost to Project
Emergency and Information Booklet	- Districts	- Construction Staff - Contractors - Emergency Services	- Make information easily available. - Possible faster response time	- Requires contacts to be made by district personnel. - Information needs to accurate	- Construction	Low

Table 3.2 - ITD Project Information and Outreach for Non-Significant Projects

Strategy	Who	Primary Target Audience	Benefit	Issues	Timing	Relative Cost to Project
***Brochures / flyers Fact sheets / newsletters**	- Designers/District	- Local travelers - Commuters - Commercial drivers - Residents	- Low cost - Easy to distribute	- Information can become stale quickly. - Often targets local motorists only. - Must be designed in a manner that makes drivers want to read the information.	- Pre-construction - Construction - Post-Construction	Low/ Medium
****Public meetings / task forces / workshops / events**	- Designer (preconstruction) - District (during construction)	- Local travelers - Major trip generators - Residents - Businesses - Public officials - Major employers - Local agencies	- Good exposure to the public. - Give agency a chance to raise credibility with the public. - Gives public a chance to voice their concerns.	- Need to make sure the right audience is at the events. - Need to be wary of making “empty” promises.	- Pre-construction - Construction	Low
Web Base Construction Map	- District	- All travelers	- Low cost - Timely Information - Can provide detour information	- Target audience must be aware of the web site. - May not reach all of the target audience (excludes people without and Internet connection. - Information must be current and active. - Cost will vary dependent on complexity of web site. - Site should be updated daily.	- Construction	Low
Project hotline / 511 System	- District Maintenance and Engineering	- Pre-trip travelers - Drivers en route	- Information can be accessed whenever it is needed. - Can allow motorists to provide feedback via recorded message. - May be easy to update.	-Information must be current. - Audience needs to be aware of the hotline number.	- Construction	Low/ Medium

Table 3.2 - ITD Project Information and Outreach for <u>Non-Significant Projects</u>

Strategy	Who	Primary Target Audience	Benefit	Issues	Timing	Relative Cost to Project
***Dynamic message signs (DMS)	- Districts/ Contractor	- Drivers en route	- Provides information directly to motorists affected by the project. - Can provide detour information.	- Message must be easy to read. - Signs must be placed appropriately. - Information should be useful and accurate.	- Construction	Low/ Medium / High

* Only for projects that are in an urban area.
** Only for projects where a decision has been made in the PCR to include with this project.
*** For projects that effect the traveling public with detours

IDAHO TRANSPORTATION DEPARTMENT

GUIDANCE ON WORKZONE SAFETY AND MOBILITY

CHAPTER 4

TRAINING

1. Requirements of the Work Zone Safety and Mobility Program.

The WZSM program specifies that agencies require appropriate training for personnel involved in the development, design, implementation, operation, inspection, and enforcement of work zone related transportation management and traffic control. Periodic training updates are required for these personnel. These periodic training updates are to reflect changing industry practices and agency processes and procedures. This training must be relevant to the job decisions that each individual is required to make.

2. Guidance for Implementation

Personnel involved in the development, design, implementation, operation, inspection, and enforcement of work zone related transportation management and traffic control need to be trained. This includes transportation planners, design engineers, traffic and safety engineers, safety coordinators, temporary traffic control designers, and program managers, regional construction managers, construction project staff, maintenance staff, law enforcement, and contractor and utility staff. This may also include executive-level decision-makers, policy makers, senior managers, information officers, and law enforcement and incident responders.

The training needs to be appropriate to an individual's job responsibilities and to the job decisions that each individual needs to make.

Internal and external training needs must be addressed. External needs include those for project development (design or engineering service consultants) and those for construction activities. The Idaho Transportation Department must identify appropriate means to ensure that external partners develop the necessary knowledge and skills.

3. ITD Implementation

The ITD shall develop comprehensive work zone related transportation management and traffic control training programs. When such programs are developed, consideration should be given to include our partners (cities, counties, consultants and construction industry) in the training.

The Division of Highways Training Section and Project Development Section shall develop a training program that addresses the training needs of designers, traffic engineers and technicians and others that are involved in the design of work zone related transportation management and traffic control.

The Construction Section in cooperation with the Division of Highways Training office and the Districts shall develop a training program that addresses the training of construction project personnel involved in the implementation, operation, inspection and/or enforcement of work zone related transportation management and traffic control.

The Office of Highway Operations and Safety, in cooperation with the Districts, shall develop a training program that addresses the training of maintenance personnel involved in the implementation, operation, inspection and/or enforcement of work zone related transportation management and traffic control.

Training of contractors and utility workers for such activities as implementing or setting up work zone traffic control is required. The Idaho Transportation Department's Standard Specifications for Highway Construction requires training for Traffic Control Supervisors and Flaggers. Contractors are responsible to acquire the required training and certifications.

The following list describes a recommended list or courses for each of the primary subject areas:

1. Training Guidelines for ITD personnel
    a. Design
        i. Suggested training courses for individuals responsible for the design or review of Traffic Control Plans (TCP). One of the following or equal*:

            1. QuickZone (FHWA- provides training, McTrans-vendor of software)

                a. Description:
                    i. This training describes the use and application of QuickZone. This software compares the traffic impacts for work zone mitigation strategies and estimates the costs, traffic delays, and potential backups associated with these impacts.

            2. Traffic Control Design Specialists** (ATSSA / NHI / Evergreen)

                a. Description:
                    i. This training course addresses the entire process for designing, installing, maintaining, and the evaluation of temporary traffic control in work zones. This training is recommended for traffic engineers, engineering technicians, consultants and other individuals responsible for temporary traffic control design and for individuals that are responsible for designing traffic control plans for approval.

                    Certifications are effective for a four year period from completion of a course and recertification be required every four years. Recertification may consist of a shorter refresher course.

            3. Advanced Work Zone Management and Design** (NHI)
                a. Description:
                    i. This training course will provide planners, designers, construction managers, and other

transportation professionals with additional skill and knowledge of both technical and non-technical aspects of work zone design and traffic management practices.

b. Implementation/Operation/Inspection/Enforcement
    i. Suggested training course for construction Project Managers or Project Engineers. One of the following or equal*:
        1. Traffic Control Supervisor (ATSSA and Evergreen)
            a. Description:
                i. All projects from the simplest maintenance job to a multi-million dollar reconstruction project require traffic control expertise to make the project as safe as possible for the motorist and workers. The Project Manager or Project Engineer on the project needs to be trained in the latest standards, practices and procedures to accomplish this goal.

                Certifications are effective for a four year period from completion of a course and recertification be required every four years. Recertification may consist of a shorter refresher course.

    ii. Suggested training course for construction inspectors/technicians. One of the following or equal*:
        1. Traffic Control Technician** (ATSSA and ITD)
            a. Description:
                i. All those involved in construction work zone projects should have a basic knowledge of temporary traffic control that allows them to assist in monitoring and recognition of deficiencies during the course of a project.
        2. Comprehensive Inspection Training Course** (ATSSA – Training CD)
            a. The training consist of 14 modules geared towards specific topics; Inspection basics, nighttime traffic control, flagging operations, signs and supports, portable changeable message boards, arrow panels, channelizing devices, pavement markings, raised pavement markers and delineators, warning lights and floodlights, crash cushions, portable concrete barriers, truck mounted attenuators, and guardrail installation and inspection.

            **Certifications are effective for a four year period from completion of a course and recertification be required

every four years. Recertification may consist of a shorter refresher course.

c. Maintenance
    i. Suggested training courses for Maintenance Section Supervisor:
        1. Low-Speed Lane Closures** (ATSSA)
            a. Introduces the basic concept and techniques related to lane closures in low-speed areas, such as advance warning areas, transitions, buffers, work spaces, ad termination areas, standards, typical setups, channelizing, devices, use of flaggers, installation and removal, residential and urban areas.
        2. Moving/Mobile Operations** (ATSSA)
            a. Review of issues related to work zones that are in motion such as mowing, stripping, parching, and line painting. Other topics include standards and procedures, fundamental principles, using flaggers, operations on the shoulders and beyond the shoulders, and more.
        3. Basic Worker Safety** (ATSSA / OSHA)
            a. Introduces principles and concepts related to basic worker safety, such as training, garments, visibility, nighttime work, worker safety regulations, use of barriers, shadow vehicles, use of police, special devices, and more.
        4. Mowing Operations** (ATSSA)
            a. Reviews issues related to traffic control during mowing operations. Standards and procedures, factors to consider during mowing, work beyond the shoulder and in the median, personal safety, visibility and sign spacing.
        5. Truck-Mounted Attenuator Operations** (ATSSA)
            a. Review of issues related to work zones where TMAs are used, when to use, crash cushions, type of TMA, typical uses, shadow vehicles, advance warning trucks, positioning of TMAs, roll-ahead distances, and additional situations are discussed.
        6. Comprehensive Inspection Training Course** (ATSSA)
            a. The training consist of 14 modules geared towards specific topics; Inspection basics, nighttime traffic control, flagging operations, signs and supports, portable changeable message boards, arrow panels, channelizing devices, pavement markings, raised pavement markers and delineators, warning lights and floodlights, crash cushions, portable concrete barriers, truck mounted attenuators, and guardrail installation and inspection.

            **Certifications are effective for a four year period from completion of a course and recertification be required

every four years. Recertification may consist of a shorter refresher course.

d. Traffic Control Review Team (TCRT)
    i. Suggested training courses for TCRT members:
        1. Traffic Control Design Specialists (ATSSA)
            a. Description:
                i. This training course addresses the entire process for designing, installing, maintaining, and the evaluation of temporary traffic control in work zones. This training is recommended for traffic engineers, engineering technicians, consultants and other individuals responsible for temporary traffic control design and for individuals that are responsible for designing traffic control plans for approval.
        2. Traffic Control Supervisor** (ATSSA)
            a. Description:
                i. All projects from the simplest maintenance job to a multi-million dollar reconstruction project require traffic control expertise to make the project as safe as possible for the motorist and workers.
        3. Comprehensive Inspection Training Course** (ATSSA)
            a. The training consist of 14 modules geared towards specific topics; Inspection basics, nighttime traffic control, flagging operations, signs and supports, portable changeable message boards, arrow panels, channelizing devices, pavement markings, raised pavement markers and delineators, warning lights and floodlights, crash cushions, portable concrete barriers, truck mounted attenuators, and guardrail installation and inspection.

            **Certifications will be effective for a four year period from completion of a course. Recertification will be required every four years. Recertification may consist of a shorter refresher course.

*Approval of alternate courses and materials will be the responsibility of the Traffic Control Oversight Committee (TCOC)

IDAHO TRANSPORTATION DEPARTMENT

GUIDANCE ON WORKZONE SAFETY AND MOBILITY

CHAPTER 5

PROCESS REVIEW

1. Requirements of the Work Zone Safety and Mobility Program.

The WZSM program requires agencies to conduct process reviews at least every two years.

2. Guidance for Implementation

The ultimate objective of the process reviews is to enhance efforts to address safety and mobility on current and future projects. It does not require that the results of the review be forwarded to the FHWA Division Administrator for approval.

3. ITD Implementation

In order to assess the effectiveness of work zone safety and mobility procedures, the ITD shall perform a process review covering the entire program at least every two years. This review may include the evaluation of work zone data, and/or review of randomly selected projects. The team will go through the questions listed below and review the outputs of various other activities that are completed as annual or ongoing activities.

The team will be led by the Office of Highway Operations and Safety Section with a representative from Construction, Employee Safety and Risk Management, Project Development, Planning, the District, Local Government (if applicable) and Federal Highway Administration.

This review team will gather information from crash data collected in the work zone, operational performance of work zones, construction efficiency/effectiveness, and public perception/satisfaction.

CERT Reviews – This includes documented field reviews stressing contract compliance, effectiveness and efficiency, including as it relates to work zones.

Other Process Reviews – While looking at other functional areas, occasionally traffic handling processes are mentioned incidental to other reviews and this feedback should be documented and captured.

Post-Project Reviews – This includes objective outcome reviews of what went right/wrong on projects to provide feedback to design.

The following are examples of questions that the process reviews may help answer:

- How are work zones performing with respect to mobility and safety?
- Are the best possible decisions in planning, designing, and implementing our work zones being made?
- Are customer expectations being met with respect to maintaining safety and mobility and minimizing business and community impacts both through, in and around the work zone?
- Can areas for improvement be identified?

- How have areas for improvement that were identified in the past been addressed?
- What has both worked and not worked – which strategies have proven to be either more or less effective in improving the safety and mobility of work zones?
- What other strategies can be considered for implementation?
- Are there certain combinations of strategies that seem to work well?
- Can any work zone safety and mobility trends be identified, at the national level or local level? What can be done to advocate characteristics associated with good trends? What can be done to remedy the problems associated with bad trends?
- How do work zone performance, the effectiveness of strategies, or areas of improvement vary between day work and night work?
- Should policies or agency procedures be adjusted based on what has been observed or measured?
- Can consistency be brought about in the identification of such trends, issues, and problems and in the standardization of tools and guidelines for application at the agency, State, and/or national level?

Work zone performance assessment aspects addressed in the process reviews may involve two tracks: 1) the overall work zone management process and 2) work zone field performance and management strategies. This may include:

- Collection of data including project related information as well as public and stakeholder perception.
- Synthesis and analysis of data at multiple levels (project, local, regional, State, and national) and comparison of findings to performance metrics.
- Application of the analysis results toward continually improving work zone practices, policies, processes, and procedures.

Four performance measure areas of interest for the work zone process review are safety, mobility, construction efficiency and effectiveness, and public perception and satisfaction.

Conducting process reviews should include the following action items:

- Develop review objectives.
- Determine review methods.
- Conduct review.
- Analyze and interpret results.
- Develop inferences, recommendations, and lessons learned.
- Prioritize recommendations and lessons learned.
- Set performance objectives for next review.
- Apply recommendations and lessons learned.